



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005RI27B

Title: MTBE Drinking Water Contamination in Pascoag, RI: A Tracer Test for Investigating the Fate and Transport of Contaminants in a Fractured Rock Aquifer

Project Type: Research

Focus Categories: Solute Transport, Water Supply, Toxic Substances

Keywords: Drinking water supply, MTBE, tracer test, fractured bedrock aquifer

Start Date: 03/03/2005

End Date: 02/28/2006

Federal Funds: \$4,500

Non-Federal Matching Funds: \$9,009

Congressional District: 2

Principal Investigator:

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Abstract

Ever since 2001, when Pascoag's only public drinking water well was shut down because of MTBE contamination, the people of Pascoag are without a drinking water source of their own. The MTBE problem at Pascoag is one of the largest in the country and probably the largest in New England. While Pascoag is large, it has almost all common MTBE problems in the New England region: drinking water, bedrock, and river contamination. The Rhode Island Department of Environmental Management, RI-DEM, has agreed opening the Pascoag site to scientist and students from the University of Rhode Island. The objective is to combine the immense expertise the University has to offer and work towards a systematic investigation of MTBE bedrock contamination and remediation alternatives. At the core of this proposal is a field tracer test that is designed to investigate the fate and transport of a suite of conservative tracers (e.g. bromide, dyes). The data generated during this tracer test will permit the calculation of travel times and other hydrologic parameters (e.g. dispersion) that are needed to better predict the fate of MTBE and other petroleum hydrocarbons present within the Pascoag fractured rock aquifer. Taking advantage of the unique opportunity the Pascoag site has to offer, this site will become a one-off-kind field laboratory for hands-on teaching. By having students

work next to environmental professionals and regulators, the best possible outcome will be achieved: students can apply their scientific knowledge and skills by becoming directly involved in solving a pressing, real-world environmental problem. Ultimately, our efforts are directed to assisting the people of Pascoag to re-open their well field. In addition, lessons learned from this site will be of great value to other communities in Rhode Island and in the region.